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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,859	03/05/2002	J. Barry Winder	Vista-1224	5900

7590

06/30/2003

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EXAMINER

STRICKLAND, JONAS N

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/090,859

Applicant(s)

WINDER ET AL.

Examiner

Jonas N Strickland

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Knifton et al. (US Patent 6,315,964) in view of Joly et al. (US Patent 5,712,213) and Zhang et al. (US Patent 5,672,798).

Knifton et al. discloses a reactive distillation process and system for the alkylation of liquid aromatic compounds with a liquid olefin or olefin/paraffin mixture. The aromatic compound may have from about 6 to 30 carbons. The system has a catalyst bed containing an alkylation catalyst, and a reboiler positioned below the reactor (col. 2, lines 1-24). Knifton et al. also discloses wherein the olefin feedstock is brought into contact with the paraffin (col. 2, lines 31-35). Knifton et al. continues to disclose wherein the process may be carried out at a variety of pressures (col. 7, lines 18-20). With respect to claim 3, the feedstream is comprised of 5% to 20% olefin (col. 7, line 39). Therefore, it would have been obvious to one of ordinary skill in the art to expect at least 40% to about 90% of the rest of the feedstream to be comprised of the remaining paraffin portion. However, Knifton et al. does not disclose periodically ceasing the introduction into the distillation column of the olefin-containing stream, while introducing

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an effective amount of paraffin, while continuing the flow of the aromatic, as well as the catalyst reaction zone conditions.

Joly et al. teaches a process for the rejuvenation for a solid alkylation catalyst, which includes supplying a feed into the reaction zone, which included olefins and paraffins, and then the feedstream is stopped, but then the paraffin feedstream is introduced into part of the reaction zone and this may be carried out in counter-current mode. Joly et al. teaches wherein the catalyst is rejuvenated in this manner.

Zhang et al. also teaches a process for regenerating a solid alkylation catalyst, wherein the reaction zone, may be operated under a temperature range from 100 to 250°C, under a time limit of about 12 to 24 hours (col. 8, lines 1-16). Zhang et al. continues to disclose wherein the catalyst reaction zone may be operated under a pressure in the range of 120 to about 3500 kPa (col. 10, lines 20-23).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Knifton et al., by regenerating a solid alkylation catalyst based on the teachings of Joly et al. and Zhang et al., which teach regenerating a solid alkylation catalyst, wherein the olefin feedstream is stopped, while the paraffin feedstream is continued in a counter-current direction and wherein the catalyst reaction zone may be operated under a temperature range from 100 to 250°C, under a time limit of about 12 to 24 hours, and under a pressure in the range of 120 to about 3500 kPa, respectively. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art, would have expected a process for regenerating a solid alkylation catalyst, which may be used in a reactive distillation alkylation process as

taught by Joly et al. and Zhang et al., to be similarly useful and applicable to the process disclosed by Knifton et al., which also teaches a solid alkylation catalyst, used in a reactive distillation alkylation process.


**Conclusion**

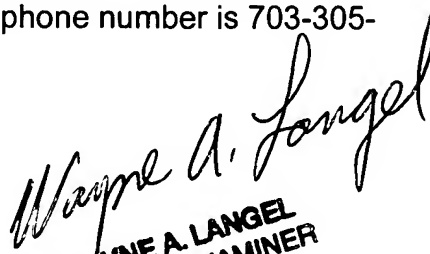
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 5,326,923; US Patent 5,648,579; US Patent 5,811,626.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N Strickland whose telephone number is 703-306-5692. The examiner can normally be reached on M-TH. 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0661.

  
Jonas N. Strickland  
June 26, 2003

  
WAYNE A. LANGEL  
PRIMARY EXAMINER